

AMENDMENTS TO THE CLAIMS:

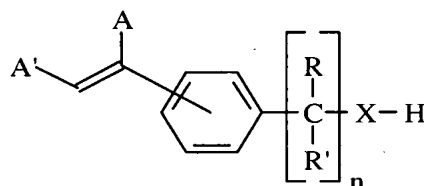
The following listing of claims is provided for the Examiner's convenience.

Listing Of Claims:

Claim 1. (Withdrawn) A process for preparing an ethylenically unsaturated macromer comprising

(A) reacting

(1) a monofunctional compound represented by the formula:



wherein:

A and A': each independently represent a hydrogen atom, an alkyl group containing from 1 to 10 carbon atoms which may or may not be substituted with one or more halogen atoms, or an aryl group containing from 5 to 6 carbon atoms which may or may not be substituted with one or more halogen atoms;

n: represents 0 or 1;

X: represents an oxygen atom or a sulfur atom;

and

R and R': each independently represent a hydrogen atom, or an alkyl group containing from 1 to 10 carbon atoms which may or may not be substituted with one or more oxygen atoms or one or more halogen atoms;

with

(2) at least one alkylene oxide containing from 2 to 8 carbon atoms, wherein the carbon atoms may be aliphatically bound, aromatically bound, cycloaliphatically bound or a combination thereof;

in the presence of
(3) at least one non-cationic alkoxylation catalyst.

Claim 2. (Withdrawn) The process of Claim 1, wherein (3) said alkoxylation catalyst comprises a double metal cyanide catalyst.

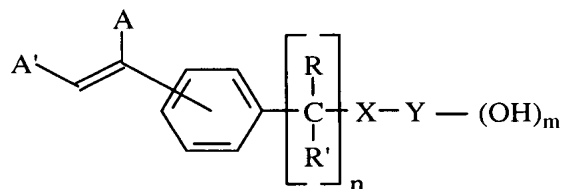
Claim 3. (Withdrawn) The process of Claim 1, wherein in said monofunctional compound:

A and A': each independently represents a hydrogen atom, a methyl group, an ethyl group, a propyl group, a butyl group, a hexyl group, a cyclohexyl group, a phenyl group, or a chloromethyl group;
n: represents 0 or 1;
X: represents an oxygen atom or a sulfur atom;
and
R and R': each independently represents a hydrogen atom, a methyl group, an ethyl group, a propyl group, a butyl group, a pentyl group, a cyclopentyl group, a hexyl group, a cyclohexyl group, or a phenyl group.

Claim 4. (Withdrawn) The process of Claim 1, wherein said monofunctional compounds are selected from the group consisting of 3-isopropenyl-cumenol, 4-isopropenylphenol and mixtures thereof.

Claim 5. (Withdrawn) The process of Claim 1, wherein said alkylene oxide is selected from the group consisting of ethylene oxide, propylene oxide, butylene oxide, glycidol and mixtures thereof.

Claim 6. (Withdrawn) An ethylenically unsaturated macromer represented by the formula:



wherein:

A and A': each independently represent a hydrogen atom, an alkyl radical containing from 1 to 10 carbon atoms which may or may not be substituted with one or more halogen atoms, or an aryl radical containing from 5 to 6 carbon atoms which may or may not be substituted with one or more halogen atoms;

n: represents 0 or 1;

X: represents an oxygen atom or a sulfur atom;

R and R': each independently represent a hydrogen atom, or an alkyl radical containing from 1 to 10 carbon atoms which may or may not be substituted with one or more oxygen atoms or one or more halogen atoms;

Y: represents a polymerized form of at least one alkylene oxide containing from 2 to 8 carbon atoms, wherein the carbon atoms may be aliphatically bound, aromatically bound, cycloaliphatically bound or a combination thereof,

and

m: represents an integer from 1 to 15, with the proviso that when $n = 0$, $m > 1$.

Claim 7. (Withdrawn) The ethylenically unsaturated macromer of Claim 6, wherein the molecular weight ranges from about 170 to about 30,000.

Claim 8. (Withdrawn) The ethylenically unsaturated macromer of Claim 6, wherein

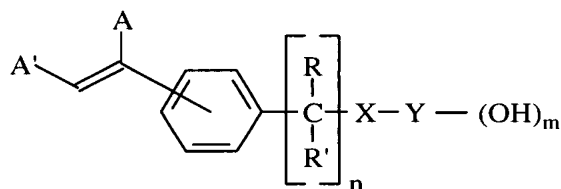
- A and A': each independently represents a hydrogen atom, a methyl group, an ethyl group, a propyl group, a butyl group, a hexyl group, a cyclohexyl group, a phenyl group, or a chloromethyl group;
- n: represents 0 or 1;
- X: represents an oxygen atom or a sulfur atom;
- R and R': each independently represents a hydrogen atom, a methyl group, an ethyl group, a propyl group, a butyl group, a pentyl group, a cyclopentyl group, a hexyl group, a cyclohexyl group, or a phenyl group;
- Y: represents a polymerized form of ethylene oxide, propylene oxide, butylene oxide, glycidol, or mixtures thereof;
- and
- m: represents an integer from 1 to 10, with the proviso that when $n = 0$, $m > 1$.

Claim 9. (Withdrawn) The ethylenically unsaturated macromer of Claim 6, wherein the molecular weight ranges from about 3,000 to about 20,000.

Claim 10. (Withdrawn) The ethylenically unsaturated macromer of Claim 6, wherein the molecular weight ranges from about 3,000 to about 10,000.

Claim 11. (Previously Presented) A process for preparing a pre-formed stabilizer comprising:

- (A) free-radically polymerizing:
- (1) from about 10 to 40% by weight, based on 100% by weight of the pre-formed stabilizer formulation, of an ethylenically unsaturated macromer represented by the formula:



wherein:

- A and A': each independently represent a hydrogen atom, an alkyl radical containing from 1 to 10 carbon atoms which is optionally substituted with one or more halogen atoms, or an aryl radical containing from 5 to 6 carbon atoms which is optionally substituted with one or more halogen atoms;
- n: represents 0 or 1;
- X: represents an oxygen atom or a sulfur atom
- R and R': each independently represent a hydrogen atom, or an alkyl radical containing from 1 to 10 carbon atoms which is optionally substituted with one or more oxygen atoms or one or more halogen atoms;
- Y: represents a polymerized form of at least one alkylene oxide containing from 2 to 8 carbon atoms in which the carbon atoms are aliphatically bound, aromatically bound, cycloaliphatically bound or a combination thereof;
- and
- m: represents 1;

with

- (2) from about 10 to 30% by weight, based on 100% by weight of the pre-formed stabilizer formulation, of at least one ethylenically unsaturated monomer;

in the presence of:

- (3) from about 0.01 to 2% by weight, based on 100% by weight of the pre-formed stabilizer formulation, of at least one free-radical polymerization initiator;

and

- (4) from about 30 to 80% by weight, based on 100% by weight of the preformed stabilizer formulation, of a liquid diluent;
and, optionally,
(5) a chain transfer agent.

Claim 12. (Previously Presented) The process of Claim 11, wherein (1) said ethylenically unsaturated macromer corresponds to the same formula, wherein:

- A and A': each independently represents a hydrogen atom, a methyl group, an ethyl group, a propyl group, a butyl group, a hexyl group, a cyclohexyl group, a phenyl group, or a chloromethyl group;
n: represents 0 or 1;
X: represents an oxygen atom or a sulfur atom;
R and R': each independently represents a hydrogen atom, a methyl group, an ethyl group, a propyl group, a butyl group, a pentyl group, a cyclopentyl group, a hexyl group, a cyclohexyl group, or a phenyl group;
Y: represents a polymerized form of ethylene oxide, propylene oxide, butylene oxide, glycidol or mixtures thereof;
and
m: represents 1.

Claim 13. (Previously Presented) The process of Claim 11, wherein said ethylenically unsaturated macromer has a number average molecular weight of from about 170 to about 30,000.

Claim 14. (Original) The process of Claim 11, wherein (2) said ethylenically unsaturated monomer is selected from the group consisting of: styrene, acrylonitrile and mixtures thereof.

Claim 15. (Original) The process of Claim 14, wherein (2) said ethylenically unsaturated monomer comprises a mixture of styrene and acrylonitrile in a weight ratio of styrene to acrylonitrile of from about 80:20 to about 50:50.

Claim 16. (Original) The process of Claim 11, wherein (3) said free-radical polymerization initiator is selected from the group consisting of alkyl hydroperoxides, aryl hydroperoxides, persulfates, perborates, percarbonates, azo compounds and mixtures thereof.

Claim 17. (Cancelled)

Claim 18. (Cancelled)

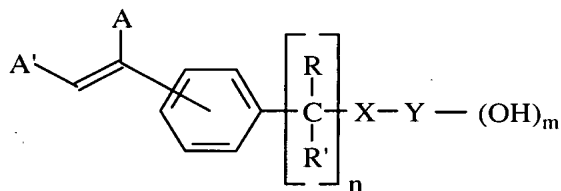
Claim 19. (Previously Presented) The process of Claim 11, wherein (4) said diluent is selected from the group consisting of monohydroxyl alcohols, polyols, hydrocarbons, ethers and mixtures thereof.

Claim 20. (Original) The process of Claim 19, wherein said monohydroxy alcohol is selected from the group consisting of methanol, ethanol, n-propanol, isopropanol, n-butanol, sec-butanol, tert-butanol, n-pentanol, 2-pentanol, 3-pentanol and mixtures thereof.

Claim 21. (Previously Presented) The process of Claim 19, wherein said polyol comprises an poly(oxypropyleneoxyethylene) polyol having an oxyethylene content of less than about 50% by weight, based on 100% by weight of oxyalkylene groups, and contains low unsaturation.

Claim 22. (Previously Presented) A pre-formed stabilizer comprising the free-radical polymerization product of:

- (1) from about 10 to 40% by weight, based on 100% by weight of the pre-formed stabilizer formulation, of an ethylenically unsaturated macromer represented by the formula:



wherein:

A and A': each independently represent a hydrogen atom, an alkyl radical containing from 1 to 10 carbon atoms which is optionally substituted with one or more halogen atoms, or an aryl radical containing from 5 to 6 carbon atoms which is optionally substituted with one or more halogen atoms;

n: represents 0 or 1;

X: represents an oxygen atom or a sulfur atom;

R and R': each independently represent a hydrogen atom, or an alkyl radical containing from 1 to 10 carbon atoms which is optionally substituted with one or more oxygen atoms or one or more halogen atoms;

Y: represents a polymerized form of at least one alkylene oxide containing from 2 to 8 carbon atoms in which the carbon atoms are aliphatically bound, aromatically bound, cycloaliphatically bound or a combination thereof;

and

m: represents 1;

with

(2) from about 10 to 30% by weight, based on 100% by weight of the pre-formed stabilizer formulation, of at least one ethylenically unsaturated monomer;

in the presence of

(3) from about 0.01 to 2% by weight, based on 100% by weight of the pre-formed stabilizer formulation, of at least one free-radical polymerization initiator;

and

(4) from about 30 to 80% by weight, based on 100% by weight of the pre-formed stabilizer formulation, of a liquid diluent;

and, optionally,

(5) a chain transfer agent.

Claim 23. (Previously Presented) The pre-formed stabilizer of Claim 22, wherein (1) said ethylenically unsaturated macromer is represented by the same formula, wherein:

A and A': each independently represents a hydrogen atom, a methyl group, an ethyl group, a propyl group, a butyl group, a hexyl group, a cyclohexyl group, a phenyl group, or a chloromethyl group;

n: represents 0 or 1;

X: represents an oxygen atom or a sulfur atom;

R and R': each independently represents a hydrogen atom, a methyl group, an ethyl group, a propyl group, a butyl group, a pentyl group, a cyclopentyl group, a hexyl group, a cyclohexyl group, or a phenyl group;

Y: represents a polymerized form of ethylene oxide, propylene oxide, butylene oxide, glycidol, or mixtures thereof;

and

m: represents 1.

Claim 24. (Previously Presented) The pre-formed stabilizer of Claim 22, wherein said ethylenically unsaturated macromer has a number average molecular weight of from about 170 to about 30,000.

Claim 25. (Original) The pre-formed stabilizer of Claim 22, wherein (2) said ethylenically unsaturated monomer is selected from the group consisting of: styrene, acrylonitrile and mixtures thereof.

Claim 26. (Original) The pre-formed stabilizer of Claim 22, wherein (2) said ethylenically unsaturated monomer comprises a mixture of styrene and acrylonitrile in a weight ratio of styrene to acrylonitrile of from about 80:20 to about 50:50.

Claim 27. (Original) The pre-formed stabilizer of Claim 22, wherein (3) said free-radical polymerization initiator is selected from the group consisting of alkyl hydroperoxides, aryl hydroperoxides, persulfates, perborates, percarbonates, azo compounds and mixtures thereof.

Claim 28. (Cancelled)

Claim 29. (Original) The pre-formed stabilizer of Claim 22, wherein (4) said diluent is selected from the group consisting of monohydroxyl alcohols, polyols, hydrocarbons, ethers and mixtures thereof.

Claim 30. (Original) The pre-formed stabilizer of Claim 29, wherein said monohydroxy alcohol is selected from the group consisting of methanol, ethanol, n-propanol, isopropanol, n-butanol, sec-butanol, tert-butanol, n-pentanol, 2-pentanol, 3-pentanol and mixtures thereof.

Claim 31. (Previously Presented) The pre-formed stabilizer of Claim 29, wherein said polyol comprises an poly(oxypropyleneoxyethylene) polyol having an oxyethylene content of less than about 50% by weight, based on 100% by weight of oxyalkylene groups, and contains low unsaturation.

Claim 32. (Withdrawn) A process for preparing a polymer polyol comprising:

(A) free-radically polymerizing:

(1) a base polyol;

(2) the pre-formed stabilizer of Claim 22;

and

(3) at least one ethylenically unsaturated monomer;

in the presence of

(4) at least one free-radical polymerization initiator;

and, optionally,

(5) a chain transfer agent.

Claim 33. (Withdrawn) The process of Claim 32, wherein the resultant polymer polyol has a solids content of 30 to 60% by weight and a viscosity of from about 2,000 to about 10,000 cSt.

Claim 34. (Withdrawn) The process of Claim 32, wherein (1) said base polyol comprises a polyether polyol having a functionality ranging from about 2 to about 8, an OH number ranging from about 10 to about 180, and a molecular weight ranging from greater than about 600 to about 15,000.

Claim 35. (Withdrawn) The process of Claim 32, wherein (3) said ethylenically unsaturated monomer is selected from the group consisting of styrene, acrylonitrile and mixtures thereof.

Claim 36. (Withdrawn) The process of Claim 35, wherein (3) said ethylenically unsaturated monomer comprises a mixture of styrene and acrylonitrile in a weight ratio of styrene to acrylonitrile of from about 80:20 to about 50:50.

Claim 37. (Withdrawn) The process of Claim 32, wherein (3) said ethylenically unsaturated monomers are present in an amount of at least about 30 % by weight, based on 100% by weight of the polymer polyol.

Claim 38. (Withdrawn) The process of Claim 32, wherein (4) said free-radical polymerization initiator is selected from the group consisting of alkyl hydroperoxides, aryl hydroperoxides, persulfates, perborates, percarbonates, azo compounds and mixtures thereof.

Claim 39. (Withdrawn) The process of Claim 32, wherein (5) said chain transfer agent is selected from the group consisting of isopropanol, ethanol, tert-butanol, toluene, ethylbenzene, triethylamine, dodecylmercaptan, octadecylmercaptan, carbon tetrachloride, carbon tetrabromide, chloroform, methylene chloride and mixtures thereof.

Claim 40. (Withdrawn) A polymer polyol comprising the free-radical polymerization product of:

- (1) a base polyol;
 - (2) the pre-formed stabilizer of Claim 22;
- and
- (3) at least one ethylenically unsaturated monomer;
- in the presence of
- (4) at least one free-radical polymerization initiator;
- and, optionally,
- (5) a chain transfer agent.

Claim 41. (Withdrawn) The polymer polyol of Claim 40, wherein the resultant polymer polyol has a solids content of 30 to 60% by weight and a viscosity of from about 2,000 to about 10,000 cSt.

Claim 42. (Withdrawn) The polymer polyol of Claim 40, wherein (1) said base polyol comprises a polyether polyol having a functionality ranging from about 2 to about 8, an OH number ranging from about 10 to about 180, and a molecular weight ranging from greater than about 600 to about 15,000.

Claim 43. (Withdrawn) The polymer polyol of Claim 40, wherein (3) said ethylenically unsaturated monomers are selected from the group consisting of styrene, acrylonitrile and mixtures thereof.

Claim 44. (Withdrawn) The polymer polyol of Claim 43, wherein (3) said ethylenically unsaturated monomers comprise a mixture of styrene and acrylonitrile in a weight ratio of styrene to acrylonitrile of from about 80:20 to about 50:50.

Claim 45. (Withdrawn) The polymer polyol of Claim 40, wherein (3) said ethylenically unsaturated monomers are present in an amount of at least about 30% by weight, based on 100% by weight of the polymer polyol.

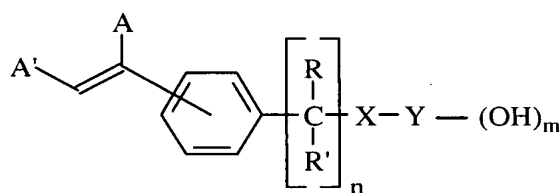
Claim 46. (Withdrawn) The polymer polyol of Claim 40, wherein (4) said free-radical polymerization initiator is selected from the group consisting of alkyl hydroperoxides, aryl hydroperoxides, persulfates, perborates, percarbonates, azo compounds and mixtures thereof.

Claim 47. (Withdrawn) The polymer polyol of Claim 40, wherein (5) said chain transfer agent is selected from the group consisting of isopropanol, ethanol, tert-butanol, toluene, ethylbenzene, triethylamine, dodecylmercaptan, octadecylmercaptan, carbon tetrachloride, carbon tetrabromide, chloroform, methylene chloride and mixtures thereof.

Claim 48. (Withdrawn) A process of preparing a polymer polyol comprising:

(A) free-radically polymerizing:

- (1) a base polyol;
- (2) an ethylenically unsaturated macromer represented by the formula:



wherein:

A and A': each independently represent a hydrogen atom, an alkyl radical containing from 1 to 10 carbon atoms which may or may not be substituted with one or more halogen atoms, or an aryl radical containing from 5 to 6 carbon atoms which may or may not be substituted with one or more halogen atoms;

n: represents 0 or 1;
 X: represents an oxygen atom or a sulfur atom;
 R and R': each independently represent a hydrogen atom, or an alkyl radical containing from 1 to 10 carbon atoms which may or may not be substituted with one or more oxygen atoms or one or more halogen atoms;
 Y: represents a polymerized form of at least one alkylene oxide containing from 2 to 8 carbon atoms, wherein the carbon atoms may be aliphatically bound, aromatically bound, cycloaliphatically bound or a combination thereof;

and

m: represents an integer from 1 to 15;

and

(3) at least one ethylenically unsaturated monomer;

in the presence of

(4) at least one free-radical polymerization initiator;

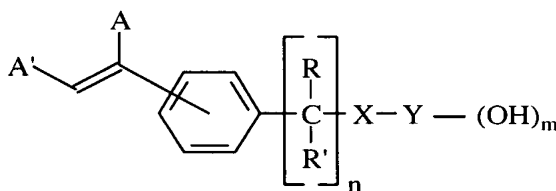
and, optionally,

(5) a chain transfer agent.

Claim 49. (Withdrawn) A polymer polyol comprising the free-radical polymerization product of:

(1) a base polyol;

(2) an ethylenically unsaturated macromer



wherein:

A and A': each independently represent a hydrogen atom, an alkyl radical containing from 1 to 10 carbon atoms which may or may not be substituted with one or more halogen

atoms, or an aryl radical containing from 5 to 6 carbon atoms which may or may not be substituted with one or more halogen atoms;

n: represents 0 or 1;

X: represents an oxygen atom or a sulfur atom;

R and R': each independently represent a hydrogen atom, or an alkyl radical containing from 1 to 10 carbon atoms which may or may not be substituted with one or more oxygen atoms or one or more halogen atoms;

Y: represents a polymerized form of at least one alkylene oxide containing from 2 to 8 carbon atoms, wherein the carbon atoms may be aliphatically bound, aromatically bound, cycloaliphatically bound or a combination thereof;

and

m: represents an integer from 1 to 15;

and

(3) at least one ethylenically unsaturated monomer;

in the presence of

(4) at least one free-radical polymerization initiator;

and, optionally,

(5) a chain transfer agent.

Claim 50. (Withdrawn) A polyurethane comprising the reaction product of

(A) a polyisocyanate component or a prepolymer thereof,

with

(B) an isocyanate-reactive component which comprises the polymer polyol of Claim 40.

Claim 51. (Withdrawn) A process for the production of a polyurethane comprising reacting:

(A) a polyisocyanate component or a prepolymer thereof,

with

- (B) an isocyanate-reactive component which comprises the polymer polyol of Claim 40.

Claim 52. (Withdrawn) A polyurethane comprising the reaction product of

- (A) a polyisocyanate component or a prepolymer thereof,
with
- (B) an isocyanate-reactive component which comprises the polymer polyol of Claim 49.

Claim 53. (Withdrawn) A process for the production of a polyurethane comprising reacting:

- (A) a polyisocyanate component or a prepolymer thereof,
with
- (B) an isocyanate-reactive component which comprises the polymer polyol of Claim 49.